A KEY TO EUROPEAN XYLOTINI (DIP.: SYRPHIDAE)

MARTIN C.D. SPEIGHT

Research Branch, National Parks & Wildlife, 7 Ely Place, Dublin 2, Ireland.

IT IS NOW some years ago that this journal published a key to the British *Xylotini* (Speight, 1981). The present key is an updated version of that key, expanded to include the other species of *Xylotini* known in Europe. Some taxa have been omitted because of their doubtful status, or because they occur only on the far eastern fringe of Europe. Those omitted are *Brachypalpus meigeni* Schiner, *B. nigrifacies* Stackelberg and *Chalcosyrphus nitidus* (Portschinsky).

The most comprehensive of recent European keys to the *Xylotini* is that of Bradescu (1991). Bradescu's keys include *B. meigeni*, but do not cover *Chalcosyrphus jacobsoni* or *C. nigripes*, *Xylota suecica* or *X. triangularis*, which are included here. Andersson's (1988) key to Swedish *Xylotini* species is also helpful. I have incorporated information from both these sources into the present key. It has proved necessary to key out males and females of a number of species separately, and the females of *X. florum* and *X. triangularis* have each been keyed out twice, due to their variability.

In western Europe, it is possible that *Chalcosyrphus eunotus* and *C. jacobsoni* are still being confused and that *Xylota meigeniana* is still confused with *X. abiens*, *X. coeruleiventris* and *X. tarda*, to judge from existing records. In central Europe, similar confusion remains possible between *Chalcosyrphus femoratus*, *C. pannonicus*, *C. rufipes* and *C. valgus*. In particular, the range of *C. rufipes* may be at present underestimated, due to confusion with *C. femoratus* or *C. valgus*. In Britain, the distinct possibility exists that *X. meigeniana* could occur, but would remain unrecognised using existing literature.

Species accounts are not provided here for the species covered by the key, but are provided for most of the western and central European species by Speight (1998).

The full list of genera and species (in alphabetic order) covered by the present key is as follows:

Brachypalpoides
- *lentus* (Meigen, 1822)

Brachypalpus
- *chrysites* Egger, 1859
- *laphriformis* (Fallén, 1816)
- *valgus* (Panzer, 1798)

Chalcosyrphus
- *eunotus* (Loew, 1873)
- *femoratus* (L., 1758)
- *jacobsoni* (Stackelberg, 1921)
- *nemorum* (Fabricius, 1805)
- *nigripes* (Zetterstedt, 1838)
- *pannonicus* (Oldenberg, 1916)
- *piger* (Fabricius, 1794)
- *rufipes* (Loew, 1873)
- *valgus* (Gmelin, 1790)

Xylota
- *abiens* Meigen, 1822
- *coeruleiventris* Zetterstedt, 1838
- *florum* (Fabricius, 1805)
- *ignava* (Panzer, 1798)
- *meigeniana* Stackelberg, 1964
- *segnis* (L., 1758)
- *suecica* (Ringdahl, 1943)
- *sylvarum* (L., 1758)
- *tarda* Meigen, 1822
- *triangularis* Zetterstedt, 1838
- *xanthocnema* Collin, 1939

Key

A. Metasternum with hairs as long as those on the ventral area of the mesopleura ..... **B**

— metasternum bare or almost bare (hairs much shorter than those on the ventral area of the mesopleura) ..... **C**

B. Chalcosyrphus

1. Abdominal tergite 3 entirely orange-red ..... **C. piger**

— abdominal tergite 3 predominantly black, at most with a pair of pinkish-orange side markings 2

2. Abdominal tergite 2 noticeably longer than wide 3

— abdominal tergite 2 wider than long 9

3. Hind femora entirely orange; hind tibiae and tarsi brownish distally ..... ***C. pannonicus***

— distal ends of hind femora black; hind tibiae and tarsi entirely black 4

4. Males (eyes meeting on the frons) 5

— females (eyes separate) 7

5. Hair fringe on the postero-lateral surface of the fore tibiae longer than the width of the tibia in dorsal view; apex of the hind tibia flat, but extended ventrally into a large, triangular flange (reminiscent of a mortar-trowel blade), which is as long as 1/2 the apical width of the tibia (antennal arista dark brown/black; stigma uniformly dark brown/black; haltere knob pale yellow) ..... ***C. femoratus*** (male)

— no hairs on the anterior pair of tibiae as long as the width of the tibia in dorsal view; apex of the hind tibia with a short, but distinct, keel postero-ventrally, terminating in a minute spike, which is distinctly shorter than 1/4 the apical width of the hind tibia 6

6. Abdominal tergite 4 nearly 1.5x as long as abdominal tergite 3 (arista yellow-brown; stigma usually yellow-brown, but may be darker distally in old specimens; haltere knob grey-brown) ..... ***C. valgus*** (male)

— Abdominal tergites 3 and 4 of almost equal length (arista dark brown/black apically, but yellow-brown on more than basal half of length; stigma dark brown; haltere knob dark-brown) ..... ***C. rufipes*** (male)

7. Haltere knob pale yellow; apex of the hind tibia extended ventrally into a large, triangular flange (reminiscent of a mortar-trowel blade), which is as long as 1/2 the apical width of the tibia (antennal arista dark brown/black; stigma uniformly dark brown/black) ..... ***C. femoratus*** (female)

— haltere knob dark brown; apex of hind tibia extended ventrally into at most a minute spike, which is distinctly shorter than 1/4 the apical width of the hind tibia 8

8. Stigma yellow-brown; arista yellow-brown; apex of the hind tibia with a short, but distinct, keel postero-ventrally, terminating in a minute spike, which is distinctly shorter than 1/4 the apical width of the hind tibia ..... ***C. valgus*** (female)

— stigma dark-brown/black; arista dark brown apically; apex of hind tibia flat ventrally, without either a postero-ventral keel or spike ..... ***C. rufipes*** (female)

9. Posterior surface of hind coxae with a patch of short, spinose bristles (abdominal tergites without pale marks, dull, with shining, metallic patches in the place of pale marks; hind femora very stout, dorsally and laterally with numerous short, outstanding hairs, which are pale toward the base of the femur but darker distally) ..... ***C. nigripes***

— posterior surface of hind coxae without bristles (scattered fine hairs may be present) ... 10

10. Males (eyes meeting) 11

— females (eyes separated) 13

11. Eyes meeting for a distance greater than half the length of the frons; arista dark brown/black; at least abdominal tergite 3 with a pair of pinkish/orange-brown marks (hair-length features as in *C. jacobsoni*) ..... ***C. nemorum*** (male)

— eyes meeting for a distance shorter than half the length of the frons; arista pale brownish-yellow; abdominal tergites without pale marks (patches of dense grey-dusting may be present) 12

12. General body surface long haired; many of the hairs on the scutellum distinctly longer than the median length of the scutellum; hairs on the postero-lateral surface of the front tibiae including some distinctly longer than the maximum width of the front tibia in dorsal view; hairs on postero-lateral surface of hind femora as long as the maximum width of the a hind femur in dorsal view; abdominal tergite 2 with a pair of dense, more-or-less rectangular, grey dust spots in the place of the pale marks found in *C. nemorum* (these dust-marks become progressively thin towards the lateral margins of the tergite, so that its surface may be shining for up to 1/3 of its width); mesoscutum with an incomplete, transverse band of black hairs mixed in among the pale hairs, at the level of the wing-bases ..... ***C. eunotus*** (male)

— general body surface short-haired; hairs on scutellum at most as long as median length of the scutellum; hairs on the postero-lateral surface of the front tibiae all shorter than the maximum width of a front tibia in dorsal view; hairs on posterolateral surface of hind femora distinctly shorter than the maximum width of a hind femur in dorsal view; abdominal tergite 2 with a pair of undusted, mirror-like, brightly shining metallic patches in the place of the pale marks found in *C. nemorum;* mesoscutum entirely pale-haired ..... ***C. jacobsoni*** (male)

13. Arista dark brown/black; abdominal tergites 2 and 3 each usually with a pair of distinct, more-or-less shining pinkish/brownish-orange marks, which remain only thinly dusted and vaguely shining even when obscure or almost absent (hair-length features as in *C. jacobsoni*); mesoscutum vaguely shining, except for 2 or 4 obscure, matt black, longitudinal stripes (these stripes can be almost indiscernible) ..... ***C. nemorum*** (female)

— arista pale yellow-brown; abdominal tergites 2 and 3 each with a pair of densely grey-dusted patches in the place of the pale marks found in *C. nemorum* (these grey dust patches may meet in the mid-line to form a transverse grey band across the tergite); mesoscutum usually mostly dull, dusted grey/grey-brown, except for four matt-black, longitudinal stripes (however, these can also be largely obscured by general, thick dusting, or the mesoscutum can be less heavily dusted, appearing vaguely shining) 14

14. General body surface long haired, many of the hairs on the scutellum distinctly longer than the median length of the scutellum; the hairs on the postero-lateral surface of the front tibiae including some distinctly longer than the maximum width of the front tibia in dorsal view; hairs on posterolateral surface of hind femora as long as the maximum width of the a hind femur in dorsal view; mesoscutum with an incomplete, transverse band of black hairs mixed in among the pale hairs, at the level of the wing-bases ..... ***C. eunotus*** (female)

— general body surface short haired, the hairs on the scutellum at most as long as its median length; the hairs on the postero-lateral surface of the front tibiae all shorter than the maximum width of a front tibia in dorsal view; hairs on posterolateral surface of hind femora distinctly shorter than the maximum width of a hind femur in dorsal view; mesoscutum entirely pale-haired ..... ***C. jacobsoni*** (female)

C. Upper and lower mesopleural hairs patches connected across the central area of the sclerite, anteriorly, by scattered, rather shorter hairs (abdominal tergite 3 entirely pale-haired and entirely orange) ..... ***Brachypalpoides lentus***

— upper and lower mesopleural hairs patches distinctly, and broadly, separated, the area between them entirely bare ..... **D**

D. Hairs on general body surface very long, those on the scutellar disc including many that are more than 2x as long as the median length of the scutellum; abdominal tergite 3 entirely pale-haired, medially with either upstanding or more-or-less recumbent hairs that are longer than 0.5 the basal depth of the hind tibiae (in lateral view) ..... **E**

— hairs on the general body surface of short to moderate length, those on the scutellar disc no longer than 1.2x the median length of the scutellum, at the most; abdominal tergite 3 medially with very short (less than 0.25x the basal depth of the hind tibiae, in lateral view), black, recumbent hairs along its entire length ..... **F**

E. ***Brachypalpus***

1. Males (eyes meeting above antennae) 2

— females (eyes not meeting above antennae) 4

2. Hind tibiae gently curved in apical third; no hairs on the hind tibiae as long as the maximum width of a hind tibia; hairs on general body surface mostly sandy brown (abdominal tergites entirely undusted, brightly shining) ..... ***B. laphriformis*** (male)

— hind tibiae angled abruptly at about one third from its distal end and with a triangular flange projecting strongly from its ventral surface at about one third from the base of the tibia; hairs clustered around middle of postero-lateral surface of hind tibiae longer than the maximum width of a hind tibia 3

3. Hairs on general body surface rufous; abdominal tergites 2 and 3 generally undusted, brightly shining, but each with a pair of dull, narrow black bars of dusting .... ***B. chrysites*** (male)

— hairs on general body surface very pale brownish yellow; abdominal tergites 2 and 3 thinly dusted dark grey over most of surface, rather dull, but each with a pair of transverse black bars that are entirely undusted, brightly shining ..... ***B. valgus*** (male)

4. Hair covering on abdomen reddish-yellow; hair on abdominal tergite 3 reclinate, on disc more than one and a half times as long as the maximum depth of a hind tibia .. ***B. chrysites*** female)

— hair covering on abdomen whitish yellow/brownish and black; hair on abdominal tergite 3 upstanding, on disc no longer than maximum depth of a hind tibia (hair at lateral margins longer) **5**

5. Frons undusted, shining across most of its width, only dusted narrowly against the eyes; notopleural area and indented line of the transverse suture on the mesoscutum undusted, shining; hind coxae black; hind tarsi with second tarsomere about 2 times as long as its maximum width ..... ***B. valgus*** (female)

— frons mostly covered in dusting, the two large dust spots almost meeting in the mid-line; notopleural area and indented line of the transverse suture on the mesoscutum heavily dusted grey, dull; ventral surface (at least) of the hind coxae yellow; hind tarsi with second tarsomere distinctly greater than 2 times as long as its maximum width ..... ***B. laphriformis*** (female)

F. Xylota

1. Legs entirely black ..... ***Xylota suecica***

— legs partly pale (whitish or yellowish) **2**

2. Baso-ventral ridge on hind tibiae covered in short, black spines ..... ***Xylota segnis***

— baso-ventral ridge (when present) on hind tibiae bare **3**

3. Abdominal tergite 4 entirely, or almost entirely covered with golden or whitish-yellow hairs (some short black hairs may be present along the basal margin, especially medially, but only within the basal half of the surface of the tergite) **4**

— abdominal tergite 4 black-haired over most of its surface and entirely black-haired medially, from base to apex **6**

4. Abdominal tergite 2 more than one and a half times as wide as long; adpressed abdominal hairs only vaguely golden, more a faded whitish-yellow colour; male hind trochanter with one blunt spike ..... ***X. triangularis*** (*pro parte*)

— abdominal tergite 2 as long as wide or only slightly (less than one and a quarter times) wider than long; adpressed hairs on abdominal tergites brightly golden; male hind trochanter with two blunt spikes **5**

5. Hind tibiae black on apical third ..... ***X. sylvarum***

— hind tibiae entirely yellow ..... ***X. xanthocnema***

6. Hind tibiae widely yellow at both ends; hind basitarsi (and two succeeding tarsal segments) yellow (abdominal tergites 2 and 3 with orange bands) ..... ***X. ignava***

— hind tibiae yellow only at the base; hind basitarsi dark brown/black (except in *X. triangularis* female) **7**

7. Hairs on the antero-dorsal surface of the hind femora including many at least as long as half the maximum depth of the hind femur (mesanepisternite 1 usually mostly dusted, dull; fore basitarsus without a long, white, bristly hair dorso-apically; in the male the hyopygium is black-haired) ..... ***X. florum*** (male, plus female *pro parte*)

— hairs on the antero-dorsal surface of the hind femora all shorter than half the maximum depth of a hind femur **8**

8. Males (eyes meeting above the antennae) **9**

— females (eyes not meeting above the antennae) **13**

9. Abdominal tergite 2 longer than wide **10**

— abdominal tergite 2 wider than long **11**

10. Fore basitarsus with a long, white, bristly hair dorso-apically, which reaches to the apical margin of the second tarsal segment; the pale hairs on the basal half of the antero-dorsal surface of the hind femora are of uniform length, none of them longer than one quarter the maximum depth of a hind femur; wing membrane not infuscated ..... ***X. tarda*** (male)

— fore basitarsus without a long, white, bristly hair on the dorsal surface; the pale hairs on the basal half of the antero-dorsal surface of the hind femora of uneven length, some of them as long as one third the maximum depth of the femur; wings brownish over much of the apical half of the surface ..... ***X. meigeniana*** (male)

11. Genital capsule at least partly black-haired; antero-dorsal surface of hind femora with hairs longer than half the depth of the femur clustered within the basal quarter of the length of the femur ..... ***X. coeruleiventris*** (male)

— genital capsule entirely (or almost entirely) whitish-haired; hairs on antero-dorsal surface of hind femora include some as long as half the maximum depth of the femur, these hairs being scattered over more than the basal half of the length of the femur **12**

12. Dorsum of mesoscutum with a transverse band of black hairs between the wing bases ..... ***X. triangularis*** (male *pro parte*)

— dorsum of mesoscutum pale-haired ..... ***X. abiens*** (male)

13. Mesanepisternite 1 with most of surface undusted, brightly shining **14**

— Mesanepisternite 1 with either entire surface, or most of surface dull, dusted **15**

14. Abdominal tergite 3 with a transverse, orange band across anterior half of the tergite; hind femora with middle third of ventral surface covered in black, spiny hairs . . ***X. tarda*** (female)

— abdominal tergite 3 with a pair of pinkish markings, which may be reduced, or obscure; hind femora with middle third of ventral surface almost entirely covered in adpressed, yellow, spiny hairs, any black spiny hairs intermixed being mostly along the lateral margins ..... ***X. meigeniana*** (female)

15. Hind tarsi with basitarsus and second tarsomere partly or mostly brownish-yellow dorsally (always pale apically), contrasting sharply in colour with the more distal, black segments (pale hairs on abdominal tergites 2 and 3 yellow or whitish) . . . . ***X .triangularis*** (female, *pro parte*)

— all hind tarsomeres almost entirely black dorsally (pale hairs on abdominal tergites 2 + 3 whitish) **16**

16. Longest hairs on antero-dorsal surface of hind femora noticeably more than one third as long as the maximum depth of the femur (nearly 1/2 the depth of the femur) . . . ***florum*** (female, *pro parte*)

— longest hairs on the antero-dorsal surface of the hind femora no more than as long as the maximum depth of the femur **17**

17. Hind tibiae pale whitish yellow on basal third of length ..... ***X. coeruleiventris*** (female)

— hind tibiae pale whitish yellow on at most basal fifth of length ..... ***X. abiens*** (female)

Acknowledgments

I am most grateful to the following, who have either helped with loan of specimens or in testing the key: Claus Claussen, Ted and David Levy, Tore Nielsen, Colin Plant, Ulrich Schmid, Thomas Moertelmaier. Tore Nielsen has given of his time and experience in both ways, and in translating chunks of Andersson's (1988) key.

References

Andersson, H. 1988 De svenska Xylotini-arterna (Diptera, Syrphidae). *Ent. Tidskr.* **109**: 129-137.

Bradescu, V. 1991 Les Syrphides de Roumanie (Diptera, Syrphidae), Clés de détermination et répartition. *Trav. Mus. Hist. nat. Grigore Antipa* **31**: 7-83.

Speight, M.C.D. 1981 A key to the Xylotini (sensu Hippa) known in Great Britain and Ireland, plus *Xylota ignava* (Dipt., Syrphidae). *Entomologist's Rec. J. Var.* **93**: 25-27.

– , 1998 Species accounts of European Syrphidae (Diptera): the Atlantic zone species (revised). *Syrph the Net: the database of European Syrphidae (Diptera) on the Internet* **7**: 190pp. Syrph the Net Publications, Dublin.

Cinochira atra Zett. (Dip.: Tachinidae) from Blackheath, north-west Kent)

The following records supplement those given by Laurence Clemons in his recent paper on the Phasiinae of Kent (*antea*: 27-35) – from which, having been sent to him, they were doubtless omitted by accident. The species appears rare in the county, and indeed generally, but from its small size and inconspicuous appearance is likely to be much overlooked.